L 41026-66 EWT(1)/EPC(k)-2/EPD/EWP(k)/T IJP(c) WG

ACC NR: AP6026983 SOURCE CODE: UR/0051/66/021/002/0258/0260

AUTHOR: Kalitseyevskiy, N. I.; Popov, M. M.; Rymarchuk, Yu. A.; Tolchinskaya, T. B.; Chayka, M. P.

ORG: none

TITLE: Gas laser generation power in nearly confocal resonators

SOURCE: Optika i spektroskopiya, v. 21, no. 2, 1966, 258-260

TOPIC TAGS: gas laser, neon helium laser, infrared laser, LASER ENERGY, NEON, HELIUM

ABSTRACT: A qualitative explanation of the mechanism responsible for the appearance of the maximum of power generation in a nearly confocal resonator of a gas laser is offered. The generation of a neon-helium laser at $\lambda = 0.63$ and 1.15 μ was studied. It is shown that because of a decrease in the figure of merit in the region of instability of the generation, a minimum should appear on the curve representing the generation power as a function of L (L being the distance between the mirrors). The width of the minimum is equal to the width of the instability region traversed, and is determined by the difference in the mirror radii ΔR. In a study of a resonator with mirrors whose radii $R_1 = R_2 = 250$ cm within 0.4 cm, minima were obtained whose width was greater than 0.4 cm and was varied by shifting the discharge tube along the resonator axis and replacing the tube by another. These experimental data were attributed to the distorting influence of the exit windows of the discharge tube. It is shown

Card 1/2 UDC: 621.375.9:535 (206.3)

L 41096-66

ACC NR: AP6026983

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that a tube window built with an error of $\sim\frac{\lambda}{2}$ and consisting of a lens with a focal length of 100 m causes the appearance of a region of instability of width $\delta L = 6$ cm at $R = 250$ cm. The region of instability was found in similar fashion for a resonator where the space between one of the mirrors and the window is filled with a gas with refractive index N_r different from the refractive index of air, N_a. In this case, $L = \frac{N_r - N_a}{N_r} R$. These calculations were confirmed in a series of experiments.

Authors are grateful to E. Ye. Fradkin for his discussion and to A. N. Razumovskiy for his assistance in the experiment. Orig. art. has: 2 figures and 1 formula. [27]

SUB CODE: 20/ SUBM DATE: 14Mar66/ ORIG REF: 005/ OTH REF: 002/ ATD PRESS: 5057

Card 2/2 hs

VAKAR, A.B., kand.khimicheskikh nauk; TOLCHINSKAYA, Ye.S., nauchnyy sotrudnik

Effect of gamma rays on the gluten and baking quality of wheat flour. Trudy VNIIZ no.38:67-95 '60. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna.
(Wheat) (Gluten) (Gamma rays)

VAKAR, A.B.; EL'-MILIGI, A.K.; TOLCHINSKAYA, Ye.S.; ZABRODINA, T.M.

Physicochemical properties of gluten determining its quality. Biokhim. zer. i khlebopech. no.7:3-62 '64.

(MIRA 17:9)

1. Institut biokhimii imeni Bakha AN SSSR i Vsesoyuznyy nauchno-issledovatel'skiy institut zerna.

TOICHINSKIY, A., inzh.; GURMAN, B.

Work practices of the Ukrainian provincial interfarm planning organizations. Sel'.stroi. 15 no.6:9-10 Je '60. (MIRA 13:8)

1. Korrespondent zhurnala "Sil'ske budivnytstvo."
(Ukraine--Farm buildings)
(Ukraine--Collective farms--Interfarm cooperation)

VAKAR, A.B., kand.khim.nauk; KALOSHINA, Z.M., nauchnyy sotrudnik; ARKHIPOVA, Ye.I., nauchnyy sotrudnik; TOLCHINSKAYA, Ye.S., nauchnyy sotrudnik

Effect of ionizing radiations on wheat and corn seed. [Trudy] VNIIZ no.35:43-54 '58. (MIRA 11:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki (for Vakar, Arkhipova, Tolchinskaya). 2. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya im. K.A. Timiryazeva (for Kaloshina).
(Radiation--Physiological effect) (Wheat) (Corn (Maize))

LERNER, L.; TOLCHINSKIY, I.

A butter cutting machine. Sov. torg. 33 no.11:56-58 N '59.
(MIRA 13:2)
(Butter trade--Equipment and supplies)

TOLCHINSKIY, I. M.

USSR/ Chemistry - Catalytic conversion

Card 1/1 : Pub. 22 - 23/49

Authors : Topchiev, A. V., Academician; Tolchinskiy, I. M.; and Krentsel', B. A.

Title : Effect of pentenes and boron fluoride on the conversion of pentane over an aluminum silicate catalyst

Periodical : Dok. AN SSSR 98/4, 597-600, Oct. 1, 1954

Abstract : The effect of pentene additions on the yield of pentane conversion products, was investigated at high temperatures and pressures in the presence of an $Al_2(SiO_3)$ catalyst. The promoting effect of BF_3 during the conversion of pentane over an $Al_2(SiO_3)$ catalyst, was also studied. Results obtained during pentane conversion over an $Al_2(SiO_3)$ catalyst in the presence of a pentene addition and conversion over an identical catalyst saturated with BF_3, are shown in tables. Five references: 3-USSR; 1-USA and 1-English (1946-1952). Tables; graphs.

Institution : ...

Submitted : June 25, 1954

BRONSHTEIN, B. L.; TOLCHTANSKII, M. TS.

Colon (Anatomy)-Cancer

Cancer of the colon., Novosti med., No. 21, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1952. Unclassified.

BRONSHTEIN, B. L.; TOLCHIANSKII, M. TS.

Colon(Anatomy)-Cancer

Cancer of the colon., Novosti med., No. 21, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1952. Unclassified.

CHAPLITSKIY, Vladimir Konstantinovich [Chaplyts'kyi, V.K.]; SHAMIS, Emanuil Isaakovich; TOLCHINSKIY, A.A. [Tolchyns'kyi, A.A.], glavnyy red.; FAL'KO, Yu.G. [Fal'ko, IU.H.], red.

[Lowering building costs on collective farms] Shliakhy znyzhennia vartosti budivnytstva v kolhospakh. Kyiv, 1960. 30 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukraine'koi RSR. Ser.6, no.23). (MIRA 14:2)
(Farm buildings--Costs)

KAZINITSKIY, Mikhail Il'ich, inzh.; PLOTKIN, Naum Borisovich, inzh.; TOLCHINSKIY, Aleksandr Aleksandrovich, inzh.; CHAPLITSKIY, Vladimir Konstantinovich, inzh.; NASEDKIN, V.M., inzh., retsenzent; SIVITSKIY, K.P., inzh., retsenzent; KOTOVICH, B.M., dotsent, retsenzent; VOLCHANSKIY, R.A., kand.tekhn.nauk, nauchnyy red.; DENISOV, A.A., dotsent, nauchnyy red.; BILINSKIY, M.Ya., red.; RAKOV, S.I., tekhn.red.

[Handbook for collective farm construction foremen] Spravochnik kolkhoznogo desiatnika-stroitelia. Moskva, Vses.uchebno-pedagog. izd-vo Trudrezervizdat, 1959. 564 p. (MIRA 13:5)
(Building)

LASHCHINSKIY, A.A., inzh.; TOLCHINSKIY, A.R., inzh.; GOLUBEV, B.A., inzh., retsenzent; YERSHOV, B.A., inzh., retsenzent; LOGINOV, N.N., inzh., red.; VASIL'YEVA, V.P., red.izd-va; MIKHEYEVA, R.N., red.izd-va; SPERANSKAYA, O.V., tekhn.red.

[Fundamentals of the design and calculation of chemical apparatus] Osnovy konstruirovaniia i rascheta khimicheskoi apparatury; spravochnik. Moskva, Mashgiz, 1963. 468 p. (MIRA 17:1)

TOLCHINSKIY, B.

"Largest Radio Telescope," by B. Tolchinskiy, Cgonek, No 3, 13 Jan 57, p 13

The "world's largest" radio telescope went into operation [Photo No 204444] at Pulkovo Heights. It was built on the principle advanced by Prof S. E. Khaykin and N. L. Kaydanovskiy. The area of the telescope site at present is about 350 sq m, but in the future it is planned that this area will be doubled.

The Main Pulkovo Astronomical Observatory of the Academy of Sciences USSR is conducting a series of observations with the aid of this new telescope. The reflectors of this telescope pick up celestial radiation and reflect and focus it on a special antenna placed at the center of this reflector system. From the antenna, the radio waves travel to the receiver, where they are amplified and recorded on a tape.

Sum 1274

TOLCHINSKIY, I.

Conveyer with a changing gradient. Sov. torg. 33 no. 9:55-57 S '60. (MIRA 14:2)

(Conveying machinery)

ZHEVANIK, V., inzh.; TOLCHINSKIY, I., inzh.

To lighten the work burden of confectioners. Obshchestv. pit. no. 5:32-33 My '61. (MIRA 14:5)
(Confectionery)

LERNER, L.; TOLCHINSKIY, I.

A new accumulator cart with a lifting platform. Sov.torg. 33 no.1:43-44 Ja '60. (MIRA 13:4)
(Fork lift trucks)

LERNER, L.; TOLCHINSKIY, I.

New conveyers. Sov. torg 33 no.10:58-60 O '59.
(MIRA 13:1)
(Conveying machinery)

8A

10

V Liquid-phase saponification of butyl chlorides B. A. Krentsel and I. M. Polchinskii (Petroleum Inst., Acad. Sci. U.S.S.R., Moscow). *Zhur. Prikład. Khim.* (J. Applied Chem.) **23**, 1051–5(1950). Sapon. of BuCl with $Ca(OH)_2$ in an autoclave (1 l.) gave, in 4 hrs., the following yields of BuOH, at 100, 155, 165, and 168°, resp.: 11.6% with respect to BuCl charged (49.4% with respect to BuCl reacted), 47.0 (83.5), 41.6 (70.5), and 43.8 (80.0). The optimum temp. of approx. 150° corresponds to a pressure in the autoclave of 10–12 atm. The fall of the yield above 150° is apparently due to dehydration of the BuOH. In the 150–60° range, the yield with respect to the BuCl reacted varies very little with the length of the run, whereas the yield with respect to the BuCl charged is max. at about 4 hrs. The "sp. productivity" of the reactor, i.e. the amt. of BuOH produced, in g./l./hr., decreases with increasing duration of the run; thus, in 1, 3, 5, and 8 hrs., it is 9.2, 7.8, 4.0, and 2.2 g./l./hr. Addn. of a tech. emulsifier, a product of sulfochlorination of the kerosene fraction of a synthetic Fischer-Tropsch fuel, in the amt. of 33.4% of the BuCl charged, had very little effect on the yield with respect to BuCl reacted, but raised by a factor of approx. 1.5 the yield with respect to BuCl charged. The unreacted BuCl can be successfully sapond. in a 2nd run. Iso-BuCl can be sapond. under the same conditions with a yield of 50.5% (with respect to iso-BuCl charged) at 150°. N. Thon

1951

CA

Liquid-phase saponification of butyl chlorides. B. A. Krentsel and I. M. Tolchinskii. *J. Applied Chem. U.S.S.R.* 23, 1117-21(1950)(Engl. translation).—See *C.A.* 45, 3707*a*. B. R.

TOLMACHEV, A. I.

"Die evolution der Pflanzen in artisch Eurasiem wahrend und nach der quaternaren Vereisung."

report submitted to 10th Intl Botanical Cong, Edinburgh, 3-12 Aug 64.

TOLCHINSKIY, I. M.

USSR/Chemistry - Fuels, Alkylation

11 Sep 52

"The Thermal Process of the Destructive Alkylation of Pentane," Ya. M. Paushkin, Acad A. V. Topchiyev, B. A. Krentsel', I. M. Tolchinskiy, Inst of Petroleum, Acad Sci USSR

"Dok Ak Nauk SSSR, Vol 86, No 2, pp 321-323

The destructive alkylation of pentane at high temps and pressures without the use of catalysts was carried out in a rotating autoclave. The optimum temp for converting pentane into liquid, high-boiling hydrocarbons lies between 450-460°; the pressure for the temper is 250-310 atm. The optimum time for the reaction is 2 hrs. Prolongation of time; as well as increase in temp, leads to formation of gaseous products. The hydrocarbons formed during the thermal conversion of pentane are a result of destructive alkylation, cyclization, and cracking of pentane with subsequent polymerization of the unsatd hydrocarbons.

PA 235T27

TOCHINSKIY, I.M.

1. TOPCHIYEV, A. V., Acad.; KRENTSEL', B. A.; PAUSHKIN, Ya. M.; TOCHINSKIY, I. M.

2. USSR (600)

4. Alkylation

7. High temperature destructive alkylation of pentane in the presence of oxidic catalysts. Dokl. AN SSSR, 86, No. 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

TOLCHINSKIY T M

5

~~USSR/Chemistry — Petroleum~~ TOLCHINSKIY, I. M. Mar/Apr 53

"Transformation of Pentane Into Liquid Hydrocarbons and Gas at 250-360 Atmospheres and 400-500 C" A.V. Topchiyev, Ya. M. Paushkin, I. M. Tolchinskiy, Petroleum Inst, Acad Sci USSR

Iz Ak Nauk SSSR, OKhN, No 2, pp 260-268

Investigation of the thermocatalytic transformation on n-pentane at 450-460° and a pressure of 300 atm showed that in the absence of catalysts both liquid and gaseous hydrocarbons are formed. The compn ofthese hydrocarbons indicates that destructive alkylation, cyclization, cracking, and polymerization take place. Use of certain oxide catalysts lowers the temp of the reaction, but does not affect the compn of the hydrocarbons, which contain a large quantity of branched compds as well as napthenic hydrocarbons, including pentamethylene.

256T25

TOLCHINSKIY I M

62

Effect of pentenes and of boron trifluoride on transformations of pentane over aluminosilicate catalyst. A V Topchiev, I. M. Tolchinskii and B. A. Krentsel (*Doklady Akad. Nauk SSSR*, 1954, **98**, 597—600).—The yields of liquid and gaseous products obtained when *n*-pentane is autoclaved (2 hr. at 450—460°/350 atm.) with aluminosilicate catalyst are not affected by adding 5—15% of 3-methylbut-1-ene, but the liquid products have a higher cyclic hydrocarbon content. Addition of BF_3 to the catalyst does not affect the yields of gaseous and liquid products from *n*-pentane, but the proportion of products of b.p. <150° is higher. The gaseous products obtained with and without BF_3 contain, respectively, H_2 3·2 and 2, CH_4 19·8 and 60·6, C_2H_4 20·6 and 26, C_2H_6 0·1 and 0, C_3H_6 22·6 and 6·1, C_3H_8 0·1 and 0, n-C_4H_{10} 13 and 0 and *iso*-C_4H_{10} 20·6 and 1% by vol.

R. TRUSCOTT.

(2)

TOLCHINSKIY, I.M.; KRENTSEL', B.A.; TOPCHIYEV, A.V.

Destructive alkylation of benzene with pentane. Izv.AN SSSR. Otd. khim.nauk no.3:512-521 My-Je '55. (MLRA 8:9)

1. Institut nefti Akademii nauk SSSR.
(Alkylation) (Benzene).

TOLCHINSKIY, L.M.

20-3-32/64

AUTHOR: TOPCHIYEV,A.V., Member of the Academy, KRENTSEL',B.A., TOLCHINSKIY,L.M., GARNISHEVSKAYA,G.V.

TITLE: On the Production of Crystalline Polypropylene by the Polymerization of Propylene by Means of a Metal-Organic Catalyzer. (O poluchenii kristallicheskogo polipropilena na metalloorganicheskom katalizatore, Russian)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 1, pp 113-115 (U.S.S.R.)

ABSTRACT: The chemistry of polymeric compounds has recently been enriched by new methods of polymerization which make it possible to obtain stereoregular crystalline poly- α-olefines.
The papers hitherto published contain hardly any data concerning the conditions of the synthesis of the polymerization products. Experiments hitherto carried out show that in the case of polymerization under atmospheric pressure as well as at increased pressure the best results were obtained (at a temperature of nearly 50°). As may be seen from table 1, practically the same results were obtained by working with pure and technical propyles. The X-ray picture of propylen disclosed the existence of sharp characteristic rings of crystalline material. The microphotogram did not differ

Card 1/2

On the Production of Crystalline Polypropylene by the Polymerization of Propylene by Means of a Metal-Organic Catalyzer. 20-1-31/64

from that of NATT.
Investigation of the infrared absorption spectrum of propylene showed in the broad interval of temperatures the presence of strips (characteristic in the case of amorphous metal parts), which increase considerably by melting. (With 1 Table and 5 References).

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress

Card 2/2

39834
S/081/62/000/011/042/057
E202/E192

5.3833

AUTHORS: Topchiyev, A.V., Tolchinskiy, I.M., Krentsel', B.A., and Smolyan, Z.S.

TITLE: Polymerization of olefines in the preparation of semi-products for plastics and synthetic fibres

PERIODICAL: Referativnyy zhurnal, Khimiya, no.11, 1962, 586-587, abstract 11 P32. (Tr. Vses. soveshchaniya po khim. pererabotke neft. uglevodorodov v poluprodukty dlya sinteza volokon i plast. mass. ("Proceedings of the All-Union Conference on the Chemical Conversion of Petroleum Hydrocarbons to Half-finished Products for the Synthesis of Fibres and Plastics"), Baku, AN Azerb.SSR, 1960, 37-39).

TEXT: Synthesis of polypropylene (PP) with catalyst (KT) $Al(C_2H_5)_3$ (20% solution in kerosene) together with $TiCl_4$. $Al(C_2H_5)_3$, received by direct synthesis and from ethyl bromide, was studied. Propylene was prepared by dehydration of isopropanol (99.2% C_3H_6 and 0.8% $N_2 + O_2$). Propylene-propane

Card 1/3

Polymerization of olefines in the ...

fraction of the petroleum gas (85.1% C_3H_6) was also used. PP was synthesized in a reactor with a stirrer and reflux condenser; the reactor being filled first with the solvent (benzene "Kalosha") and the necessary quantity of catalyst. Next, propylene free from contaminants was introduced. Upon completion of the reaction the reactor was cooled down to +10 °C and the contents were worked by mixing with absolute methyl alcohol in order to decompose the residual catalyst. PP was filtered off and repeatedly washed with methyl alcohol and water, then it was dried at 60-70 °C until constant weight. The effects of pressure, temperature, catalyst concentration, molar ratio of $Al(C_2H_5)_3$ to $TiCl_4$ on the yield and composition of the polymer obtained were studied. It was found that at atmospheric as well as at increased (4-6 atg) pressures, the best results were obtained at temperatures $\leq$ 50 °C. The work with pure propylene and commercial propane-propylene fraction gave substantially the same results. X-ray diffraction photograph, infrared spectrum

Card 2/3

Polymerization of olefines in the ... S/081/62/000/011/042/057
E202/E192

and temperatures of melting of the obtained polymers showed the presence of 75% crystalline phase. The possibility of using a mixture of $Al(C_2H_5)_3$ and $Al(C_2H_5)_2Br$, and also $Al(iso\text{-}C_4H_9)_3$ mixed with $TiCl_4$ as a catalyst was also studied.

[Abstractor's note: Complete translation.]

Card 3/3

S/595/60/000/000/001/014
E075/E435

AUTHORS: Topchiyev, A.V., Tolchinskiy, I.M., Krentsel', B.A., Smolyan, Z.S.

TITLE: Polymerization of olefins for the production of intermediates for plastic masses and synthetic fibres

SOURCE: Vsesoyuznoye soveshchaniye po khimicheskoy pererabotke neftyanykh uglevodorodov v poluprodukty dlya sinteza volokon i plasticheskikh mass. Baku, 1957. Baku, Izd-vo AN Azerb. SSR, 1960. 37-49

TEXT: A description is given of a method for the polymerization of propylene using triethylaluminium in combination with titanium tetrachloride as catalyst. Purified propylene was passed into a 0.5 litre glass reactor containing a solution of the catalyst in pet.ether, b.pt. 85 to 115°C. The reactor was fitted with a thermostatic jacket and a fast stirrer. Experiments under low pressure (4 to 6 atm) were carried out in a stainless steel reactor fitted with a paddle stirrer. The optimum temperature for the polymerizations was found to be 50°C. Results of the polymerization at atmospheric pressure are listed in Table 4. Another catalyst - triisobutylaluminium - was also used

Card 1/4

Polymerization of olefins ...

successfully. Triethylaluminium is synthetized from Al turnings (99.5% purity) and ethylbromide with manganese chloride acting as a flux. The active ethyl groups in the product are determined by potentiometric titration with quinoline in dioxane solution (A.I.Grayevskiy's method). Quinoline forms a complex only with the active constituents, i.e. $Al(C_2H_5)_3$, $Al(C_2H_5)_2Br$ and $Al(C_2H_5)_2H$. This mixture can be used successfully as a catalyst. Approximate composition of the product is: Al 17 to 20% wt, Br 13 to 20% wt, active ethyl groups 55 to 65% wt. $TiCl_4$ used had a density of 1.70 to 1.72. Dried pet.ether and "white spirit" were used as catalyst solvents. The prepared polymer is washed with absolute alcohol, 0.5% aqueous HNO_3 and then with 30% aqueous alcohol solution. It is dried at 60 to 70°C. The high molecular weight components are separated by fractional precipitation (acetone added to toluene solution). Experiments with different batches of catalysts and different molar ratios of catalyst and cocatalyst have shown that the optimum ratio is of the order of 8 moles of $Al(C_2H_5)_3$ to 1 mole of $TiCl_4$. Analogous results are obtained for triisobutylaluminium and lithium hydride.
Investigation of catalyst consumption in relation to its

concentration in the solvent during reaction showed that the best concentration is approximately 4% wt. In conclusion, it is mentioned that the process for the production of polypropylene can be considerably simplified by polymerizing pure condensed propylene or the propane-propylene fraction of cracking gas. A.A.Korotkov is mentioned in the article in connection with his contibution in this field. There are 8 figures and 9 tables.

Card 3/4

Polymerization of olefins ...

S/595/60/000/000/001/014
E075/E435

Table 4.

	Feedstock	
	Propylene spirit	Tech. Propylene
$Al(C_2H_5)_3$, moles	5	5
$TiCl_4$, moles	1	1
Conc. catalyst in sol. % wt.	5	5
Solvent	pet.ether	pet.ether
Gas passed, litres	70	68
Unreacted propylene, litres	55	54
Conversion, %	21.4	20.5
Time of reaction, hours	3.0	3.0
Characteristic viscosity	0.90	0.86

Card 4/4

NECHITAYLO, N.A.; SANIN, P.I.; TOLCHINSKIY, I.M.; Prinimali uchastiye: DZYUBINA, M.A.; SHIROKOVA, L.A.

Melting heat of polymers. Plast.massy no.8:3-5 '61. (MIRA 14:7)
(Polymers) (Heat of fusion)

NECHITAYLO, N.A.; TOLCHINSKIY, I.M.; SANIN, P.I.

Applying thermal analysis to the study of polymer degradation. (MIRA 13:12)
Plast.massy no.11:54-57 '60. (Thermal analysis)
(Polymers)

S/191/60/000/011/013/016
B013/B054

AUTHORS: Nechitaylo, N. A., Tolchinskiy, I. M., Sanin, P. I.

TITLE: Use of Thermal Analysis to Study the Destruction of Polymers

PERIODICAL: Plasticheskiye massy, 1960, No. 11, pp. 54-57

TEXT: The present paper gives heating curves for some polymers in the temperature range of from 20° to 800° - 900°C, and discusses the possibility of using thermal analysis for the study of destruction processes with the aid of the results obtained. Three polyethylene samples and one polypropylene sample of high molecular weight were investigated. The heating curves for the samples were plotted by a Kurnakov automatic recording photopyrometer. On heating the samples in the absence of oxygen in vacuo or an inert gas medium, only those thermal effects were fixed which were connected with the melting of crystallites (Fig. 1). It was found that the transition from the elastic-amorphous to the viscous state took place in the range of 350° - 550°C, and - as expected - was not accompanied by a thermal effect. The curves plotted on heating the samples in the presence of oxygen looked differently (Figs. 2 and 3). Both endothermic and exo-

Card 1/2

thermic effects can be observed on these curves; they correspond to the reactions of oxidation and destruction of polymers. A table gives the temperatures of phase transformations for polyethylene and polypropylene samples. The more or less similar thermograms (Figs. 2 and 3) indicate a similar character of high-temperature oxidation and destruction of the polymers examined (Refs. 3 and 5). The thermogram for the amorphous polypropylene fraction has a slightly different form. Except for this fraction, all thermograms show more or less distinctly marked exothermic effects in the region of 200°C. On the basis of the heating curves examined, thermal analysis seems to be a suitable method of studying oxidation and destruction of polymers. It may be assumed that with the aid of thermal analysis it will also be possible to determine the efficiency of stabilizers of the antioxidant type. This should facilitate their efficient choice for polymers of various types. V. A. Kargin and T. I. Sogolova are mentioned. There are 4 figures, 1 table, and 14 references: 8 Soviet, 3 US, 1 British, and 1 Italian.

TOLCHINSKIY, I.M.; MECHITAYLO, N.A.; TOPCHIYEV, A.V.

Some thermal properties of polypropylene. Plast.massy no.7:3-8 '60.
(MIRA 13:10)

(Propene--Thermal properties)

85139
S/191/60/000/007/002/015
B004/B056

15.8102

AUTHORS: Tolchinskiy, I. M., Nechitaylo, N. A., Topchiyev, A. V.

TITLE: Some Thermal Properties of Polypropylene

PERIODICAL: Plasticheskiye massy, 1960, No. 7, pp. 3 - 8

TEXT: The authors investigated the effect of the amorphous fraction content upon the temperature and thermal effects of melting (and crystallization, respectively) of polypropylene. Polypropylene was synthetized from the propane-propylene-gas fraction by means of catalysts from triethyl aluminum or tri-isobutyl aluminum, and $TiCl_3$ or $TiCl_4$. The heating (Fig.2) and cooling curves (Fig. 3) were recorded by a photorecording Kurnakov pyrometer. Measurements were carried out in a Dewar (Fig. 1, total view of the apparatus). In all polypropylene samples, the authors found the same course being taken by the curves with a weak endothermic effect at 135° - 145°C, and an intensive one at 150° - 160°C. These effects could not be explained by polydispersity, because during fractionation by means of boiling heptane (carried out by L. Sidorova), the low-molecular

Card 1/3

fraction also showed the two endothermal effects. The authors assume a non-uniform structure of the polypropylene, which may be explained only by separating the crystalline part into isotactic and syndiotactic fractions and by their X-ray examination. The thermograms of the amorphous fraction showed no marked effects (Fig. 4) because of gradual softening. The interrelation between thermal effect and degree of crystallization was investigated by measuring the surfaces of the peaks of the thermal effects. Measurements were well reproducible. The measured values deviated by not more than ± 0.1 cm^2 from the mean values. The effect of the cooling rate (0.5 - 7.0°C per minute) upon temperature and amount of the thermal effects is, as may be seen from Table 1, below. A comparison between the thermal effects of samples with 7.9% and 20.3% amorphous fraction (Table 2) with a low amorphous fraction content gave a larger area of the peaks, which did not change considerably after repeated heating. The amorphous fraction was now extracted by means of cold toluene, and artificial mixtures with various contents of amorphous fraction were produced. Whereas the melting and crystallization temperatures of the individual samples remained unchanged, the area of the crystallization peak depended on the amorphous fraction content as shown by Table 3.

Some Thermal Properties of Polypropylene

85139

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B004/B056

Table 3. Change in the area of the crystallization peak with the amorphous fraction content in artificial mixtures

Amorphous fraction content [%]	Area of the peak [cm^2]
0.0	33.7
10.0	24.6
20.0	21.0
30.0	18.4
40.0	16.0

For synthetic polypropylene samples, the same dependence was found (Table 4). The X-ray pictures showed that all samples had the same structure (example, Fig. 6). The data from Tables 3,4 are graphically represented in Fig. 5, and the change in the area of the peaks at 0 - 10%, 10 - 20%, 20 - 30%, 30 - 40% amorphous fraction content is given in Table 5. It follows herefrom that at low amorphous fraction contents (of up to about 15%), the degree of crystallization can be determined with sufficient accuracy using the differential thermal method. The authors mention papers by Z. A. Rogovin and T. V. Druzhinina, as well as by V. A. Kargin et al. There are 6 figures, 5 tables, and 19 references: 8 Soviet, 7 US, 1 British, and 3 Italian.

Card 3/3

NAMETKIN, N.S.; TOPCHIYEV, A.V.; DURGAR'YAN, S.G.; TOLCHINSKIY, I.M.

Copolymerization of dimethyl- and methylphenyldiallylsilane with propylene on the complex catalyst $(C_2H_5)_3Al + TiCl_4$. Vysokom. soed. 1 no.11:1739-1744 N '59. (MIRA 13:5)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Silane) (Propene)

AUTHORS: Topchiyev, A. V., Tolchinskiy, I. M., Krentsel', B. A. 62-58-3-26/30

TITLE: On the Possibility of the Polymerization of Ethylene in Polyethylene Into the Presence of Lithiumhydride, Aluminumhaloid and Titanium Tetrachloride (O vozmozhnosti polimerizatsii etilena v polietilen v prisutstvii litiygidrida, alyuminiygaloida i chetyrekhkhloristogo titana)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 3, pp. 375-376 (USSR)

ABSTRACT: Tsigler in his works maintained, that in heating ethereal solutions of lithium-aluminumhydride with ethylene (at a temperature of 180-200°C) a mixture of α-olefines is formed under pressure: butene, hexene, decene and dodecene. Corresponding to experimental data it is to be expected that the actual catalyst in this case is tetraethyl-lithium-aluminum. The latter is formed in consequence of the interaction of ethylene with lithiumaluminumanhydride

Card 1/2 $LiAlH_4 + 4C_2H_4 \rightarrow LiAl\left[C_2H_5\right]_4$. A formation of high-

On the Possibility of the Polymerization of Ethylene in Polyethylene in the Presence of Lithiumhydride, Aluminumhaloid and Titanium Tetrachloride

62-58-3-26/30

molecular polymers of ethylene was not observed. It was of interest to produce triethylaluminum simultaneously as well as to obtain a polymerization of ethylene to polyethylene. The experiments were carried out in the autoclave in the medium of an inert solvent. It was shown that it is possible to produce polyethylene in the presence of lithiumhydride, aluminumhalides and titanium tetrachloride. Besides, there exists the possibility of a reaction as well as of a production of polypropylene by means of the same method. There is 1 reference, which is Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR
(Institute of Petroleum , AS USSR)

SUBMITTED: October 28, 1957

Card 2/2

AUTHORS: Topchiyev, A. V., Tolchinskiy, I. M., Krentsel', B. A. 62-58-3-26/30

TITLE: On the Possibility of the Polymerization of Ethylene in Polyethylene Into the Presence of Lithiumhydride, Aluminumhaloid and Titanium Tetrachloride (O vozmozhnosti polimerizatsii etilena v polietilen v prisutstvii litiygidrida, alyuminiygaloida i chetyrekhkhloristogo titana)

PERIODICAL: Izvestiya Akademii Nauk SSSR,Otdeleniye Khimicheskikh Nauk, 1958, Nr 3, pp. 375-376 (USSR)

ABSTRACT: Tsigler in his works maintained, that in heating ethereal solutions of lithium-aluminumhydride with ethylene (at a temperature of 180-200°C) a mixture of α-olefines is formed under pressure: butene, hexene, decene and dodecene. Corresponding to experimental data it is to be expected that the actual catalyst in this case is tetraethyl-lithium-aluminum. The latter is formed in consequence of the interaction of ethylene with lithiumaluminumanhydride

$LiAlH_4 + 4C_2H_4 \rightarrow LiAl[C_2H_5]_4$. A formation of high-

Card 1/2

On the Possibility of the Polymerization of Ethylene in Polyethylene in the Presence of Lithiumhydride, Aluminumhaloid and Titanium Tetrachloride

62-58-3-26/30

molecular polymers of ethylene was not observed. It was of interest to produce triethylaluminum simultaneously as well as to obtain a polymerization of ethylene to polyethylene. The experiments were carried out in the autoclave in the medium of an inert solvent. It was shown that it is possible to produce polyethylene in the presence of lithiumhydride, aluminumhalides and titanium tetrachloride. Besides, there exists the possibility of a reaction as well as of a production of polypropylene by means of the same method. There is 1 reference, which is Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR
(Institute of Petroleum, AS USSR)

SUBMITTED: October 28, 1957

Card 2/2

TOLCHINSKIY, M. Ts.

Tolchinskiy, M. Ts. "The significance of X-ray investigation in the deagnosis of cancer of the rectum", Trudy Akad. med. nauk SSSR, Vol. L, 1949, p. 87-93, --Bibliog: 14 items.

SO: U-411, 17July 1953, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949)

LAPSHIN, Aleksandr Aleksandrovich, kand.tekhn.nauk; KUSHUL, Veniamin Moiseyevich, kand.tekhn.nauk; UDAL'TSOV, A.N., glavnyy red.; TOLCHINSKIY, M.Ye., inzh.red.

[The EV-53 electronic hygrometer. A device for gauging and signaling pressure drops] Elektronnyi vlagomer EV-53. Pribor dlia izmereniia i signalizatsii perepada davlenii. Moskva, 1956. 12 p. (Pribory i stendy. Tema 4, no.P-56-437) (MIRA 11:3)

1. Mowcos. Institut tekhniko-ekonomicheskoy informatsii.
(Hygrometry) (Pressure gauges)

TOLCHINSKIY, N. A., Cand Tech Sci -- (diss) "Research into resino-metallic caterpillar tracks of agricultural tractors." Moscow, 1960. 12 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Automechanical Inst); 150 copies; price not given; (KL, 27-60, 155)

TOLCHINSKIY, N.A., inzh.

Rubber-metal links for tractor tracks. Mekh. i elek. sots. sel'khoz. 16 no.3:25-28 '58. (MIRA 11:6)

1.Altayskiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Caterpillar tractors)

TOLCHINSKIY, N.A., kand.tekhn.nauk; KAPLINSKIY, Ye.M., inzh.

Bench for studying the characteristics of rubber-metal hinges.
Trakt. i sel'khozmash. no.9:11-12 S '65.
(MIRA 18:10)

1. Altayskiy politekhnicheskiy institut.

TOLCHINSKIY, O. [Tochyns'kyi, O.]

Draw up financial plans for construction in 1961 ahead of time. Sil'. bud. 10 no.12:18-19 D '60. (MIRA 13:12)

1. Starshiy inzhener Glavnogo upravleniya stroitel'stva Ministerstva sel'skogo khozyaystva USSR.
(Ukraine--Construction industry--Finance)
(Collective farms--Interfarm cooperation)

TOLCHINSKIY, O. [Tolchyns'kyi, O.]

Do not stop building in winter. Sil'.bud. 7 no.12:8
D '57. (MIRA 13:5)

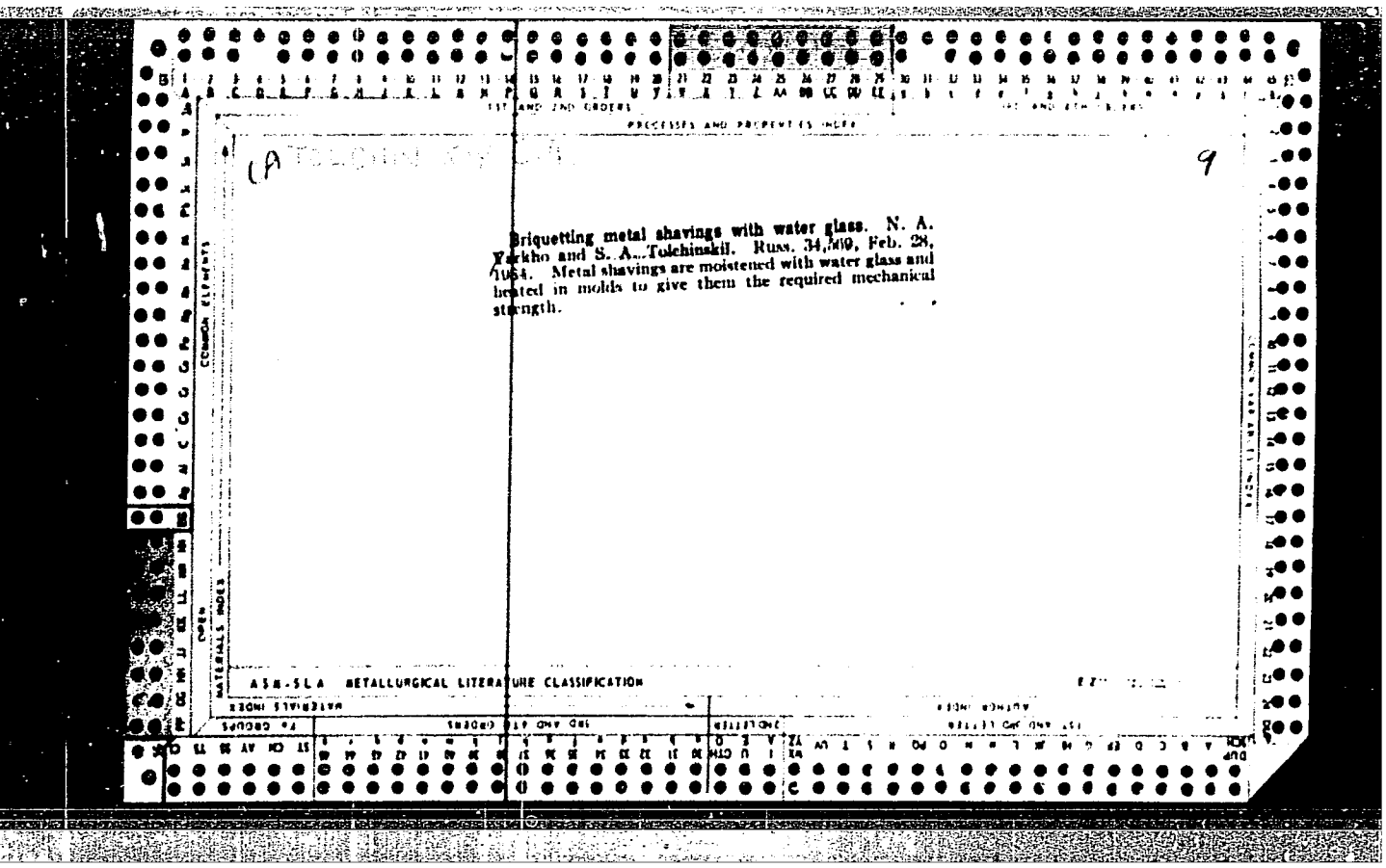
1. Nachal'nik upravleniya mezhkolkhoznykh organizatsiy Glavkolkhozstroya Ministerstva sel'skogo khozyaystva USSR.
(Building--Cold weather conditions)

TOLCHINSKIY, S. A.; SHAFKIN, A. K.; Engs.

Steam Boilers

Condenser pipes made from corrosion resistant alloys. Elek. sta. 24, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.



Briquetting metal shavings with water glass. N. A. Yarkho and S. A. Tolchinskii. Russ. 34,949, Feb. 28, 1954. Metal shavings are moistened with water glass and heated in molds to give them the required mechanical strength.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ARKHIPOV, Konstantin Nikolayevich; SOLOV'YEV, Nikolay Vasil'yevich, prof.; Prinimali uchastiye: GLEBOV, A.G.; TOLCHINSKIY, S.S.; ZOLOTNITSKIY, N.D., doktor tekhn. nauk, prof., red.; VERESKUNOV, V.K., nauchnyy red.; ZHURAVLEV, B.A., red.izd-va; KASIMOV, D.Ya., tekhn. red.

[Fundamentals of dafety engineering and fire prevention in the building materials industry]Osnovy tekhniki bezopasnosti i protivopozharnoi tekhniki v promyshlennosti stroitel'nykh materialov. Pod obshchei red. N.D.Zolotnitskogo. Moskva, Gosstroiizdat, 1962. 295 p. (MIRA 16:1)
(Building materials industry--Fires and fire prevention)
(Industrial safety)

KITAYEVICH, A.Ye.; TOLCHINSKIY, V.A.

Case of spinal meningitis of otogenous origin. Zhur. ush., nos. i gorl. bol. 23 no.5:86-87 S-O'63 (MIRA 17:3)

1. Iz otorinolaringologicheskogo otdeleniya (zav. - Ya.V. Bogatyrev) Donetskoy tsentral'noy klinicheskoy bol'nitsy.

TOLCHINSKIY, V.A.

Metastatic seminoma in the larynx. Vest.oto-rin. 20 no.5:120 S-O '58 (MIRA 11:12)

1. Iz Oto-rino-laringologicheskogo otdeleniya (zav. Yu.V. Bogatyrev) Oblastnoy tsentral'noy klinicheskoy bol'nitsy g. Stalino, Donbass.
(LARYNX, neoplasms.
7 seminoma, metastatic (Rus))
(GISGERMINOMA, case reports,
larynx, metastatic (Rus))

TOLCHINSKIY, V.G., inzh.

Progressive methods for assembling rolling mills. Mont. i spets. rab. v. stroi. 22 no.12:1-5 D '60. (MIRA 13:11)

1. Magnitogorskoye montazhnoye upravleniye Prokatmontazh tresta Vostokmetallurgmontazh.
(Rolling mills)

NEVIDITSIN, N.; BUKHSHTEYN, I.; BAYEVICH, A.; TOLCHINSKIY, Ya.; GLUGAN, A.

Regulate wages in the automotive transport industry. Avt. transp. 34 no.10:3-5 O '56. (MLRA 9:12)

1. Kiyevskiy avtotrest (for Neviditsin) 2. Nachal'nik planovogo otdela Dneprodzerzhinskoy Avtotransportnoy kontory Ministerstva stroitel'stva predpriyatiy metallurgicheskoy i khimicheskoy promyshlennosti (for Bukhshteyn) 3. Starshiy ekonomist avtotransportnoy kontory "Grozneftezavodstroy," (for Bayevich) 4. Dnepropetrovskiy avtotrest Ministerstva stroitel'stva predpriyatiy metallurgicheskoy i khimicheskoy promyshlennosti (for Tolchinskiy and Glugan).
(Wages) (Transportation, Automotive)

LAVROV, Igor' Aleksandrovich; SHTEYNBOK, G.Yu., inzh., ved. red.; TOLCHINSKIY, Ye.M., inzh., red.; SOROKINA, T.M., tekhn.red.

[Ultrathermostat with a semiconductor temperature pickup for liquids]Ul'tratermostat zhidkostnyi s poluprovodnikovym datchikom temperatury. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 8 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 34. No.P-58-53/6) (MIRA 16:2)
(Thermostat)

TOLCHINSKIY, Ye. M.

PERELESHINA, Alina Petrovna, kandidat fiziko-matematicheskikh nauk; UDAL'TSOV, A.N., glavnyy redaktor; TOLCHINSKIY, Ye.M., inzhener, redaktor.

[Thermistors used as measuring instruments] Termistory-izmeritel'nye pribory. Tema 4, no.P-56-472. Moskva, Filial Vses.in-ta nauchn. i tekhn.informatsii, 1956. 9 p. (MLRA 10:5)
(Thermistors)

TOLCHINSKIY, Ye.M.

KUZ'MIN, Petr Alekseyevich; PROK, Aleksandr Yudimovich; UDAL'TSOV, A.N., glavnyy red.; TOLCHINSKIY, Ye.M., inzh.red.

[Device for determining the specific weight of gases. Resistance thermometer for taking the temperature of surfaces] Pribor dlia opredeleniia udel'nogo vesa gazov. Termometr soprotivleniia dlia izmereniia temperatury poverkhnostei. Moskva, In-t tekhniko-ekon.inform., 1956. 9 p. (Pribory i stendy. Tema 4, no. P-56-447) (MIRA 11:2)

1. Moscow. Institut tekhniko-ekonomicheskoy informatsii.
(Gases--Measurement) (Thermometers)

TOLCHINSKIY, Ye.M.

KARANDIN, Boris Nikolayevich, inzh.; FILIPPOV, Lev Petrovich; TOLCHINSKIY, Ye.M., inzh.red.; SHTEYNBOK, G.Yu., inzh. red.; UDAL'TSOV, A.N., glavnyy red.

[Self-recording density gauge for small currents of liquid. Equipment for gauging the heat conductivity of liquids] Registriruiushchii plotnomer dlia malykh potokov zhidkosti. Ustanovka dlia izmereniia teploprovodnosti zhidkostei. Moskva, 1956. 10 p. (Pribory i stendy. Tema 4, no. P-56-417) (MIRA 11:3)

1. Moscow. Institut tekhniko-ekonomicheskoy informatsii.
(Liquids--Measurement)

IVANOV, Lev Ivanovich; MATVEYEVA, Melitina Petrovna, kand.tekhn.nauk; UDAL'TSOV, A.M., glavnyy red.; TOLCHINSKIY, Ye.M., inzh.red.

[Methods and equipment for gauging the heat of sublimation of metals according to the rate of vaporation of open surfaces] Metod i ustanovka dlia izmereniia teploty sublimatsii metallov po skorosti isparenila s otkrytoi poverkhnosti. Moskva, In-t tekhniko-ekon. inform. 1956. 10 p (Pribory i stendy. Tema 4, no.P-56-427) (MIRA 11:3)
(Heat of sublimation)

LAZAREV, Aleksandr Ivanovich, kand.tekhn.nauk; UDAL'TSOV, A.N., red.; TOLCHINSKIY, Ye.M., inzh., red.

[Equipment for studying the heat of transformations and actual heat capacity of metals at high temperatures] Ustanovka dlia issledovaniia teplot prevrashchenii i istinnoi teploemkosti metallov pri vysokikh temperaturakh. Moskva, Filial Vses.in-ta nauchnoi i tekhnicheskoi inform., 1956. 27 p. (Pribory i stendy. Tema 4, no.P-501) (MIRA 10:12)
(Metals at high temperatures) (Heat of transition)

Tolchinskiy, Yefim Moiseyevich

TYUKEL', Grigoriy Il'ich, inzh.; TOLCHINSKIY, Yefim Moiseyevich, inzh.; IVCHENKO, Dmitriy Fedorovich, inzh.; UDAL'TSOV, A.N., glavnyy red.; SHTEYNBOK, G.Yu., inzh.red.; POMOMAREV, V.A., tekhn.red.

[Visual multiple intermittent contact recorders of pressure and electricity] Mnogotochechnye opticheskie samopistsy davlenii i elektricheskikh velichin. Moskva, Filial Vses. in-ta nauchnoi i tekhn. informatsii, 1956. 42 p. (Pribory i stendy. Tema 4, no. P-56-522) (MIRA 11:3)

(Pressure gauges) (Electric meters)
(Recording instruments)

L 44681-66 EWT(1)
ACC NR: AP6005396 SOURCE CODE: UR/0413/66/000/001/0151/0152

AUTHORS: Lebedev, A. V.; Tolchinskiy, Ye. M.

ORG: none

TITLE: Null unit, Class 21, No. 165497

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 151-152

TOPIC TAGS: transistorized oscillator, dc amplifier

ABSTRACT: This Author Certificate presents a null unit containing an oscillator with a nonlinear controlled element connected in the feedback circuit. To increase the sensitivity, a differential amplifier and an oscillator with positive uncontrolled feedback and a controlled transistor are used. The collector circuit of the transistor is connected in the negative feedback loop, and the base circuit is connected to the output of the differential amplifier. To eliminate overloading of the null unit with an increase of the compared input signals, two transformers are used. The primary of one transformer is connected in the collector circuit of the transistor oscillator. The secondary is connected in the collector circuit of the controlled transistor of the negative feedback loop and in a constant resistance circuit forming the positive feedback loop. The primary of the second transformer is connected in the sum circuit of the positive and negative feedback signals, and the secondary is connected to the base of the oscillator transistor.

SUB CODE: 09/ SUBM DATE: 19Nov62

Card 1/1 hs UDC: 621.3.317.078

L [illegible] EWT(1)/EWT(m) JD/WW

ACC NR: AP6025423 SOURCE CODE: UR/0143/66/000/007/0086/0093

60
B

AUTHOR: Tolkachev, D. F.

ORG: Kazan Aviation Institute (Kazanskiy aviatsionnyy institut)

TITLE: Investigating convective heat transfer in tubular heat exchange with direct-flow of a particle suspension and a pebble bed

SOURCE: IVUZ. Energetika, no. 7, 1966, 86-93

TOPIC TAGS: convective heat transfer, heat exchanger, heat transfer rate

ABSTRACT: An experimental investigation has been conducted of the effect on heat transfer of a preheated pebble bed (cast iron shot 3.71mm in diameter, steel balls 4mm in diameter, gravel 3.24mm in diameter, and alumosilicate balls 2.88mm in diameter) and sand particles introduced into a stream of gas flowing across a bank of tubes. In the experiments with sand particles, the air temperature at the inlet into heat exchanger ranged from 114.4 to 197.3C and at the exit, from 86.2 to 106.0C; the air velocity varied from 3.92 to 10.42 m/sec. In the experiments with the seed bed, the air inlet temperatures varied from 101.8 to 149.7C, the exit temperatures from 59.9 to 87.2C and the air

Card 1/2 UDC: 536.244

ACC NR: AP6025423

velocity from 3.82 to 13.62 m/sec. The obtained results were compared with the data obtained with a flow of pure air under similar conditions. The following conclusions were drawn: 1) The pebble bed has the greatest effect on heat transfer; the intensity of the heat transfer depends more on the relative temperatures of solid particles and air than on the particle concentration; 2) The average heat transfer coefficient is 20.4% higher for the sand particles and 28.2% higher for the pebble bed than that of pure air; 3) In addition the hydraulic resistance is 52.2% higher for the sand particles and 12.8% higher for seed bed than air. 4) A heat exchanger using the sand particle suspension is not considered to be feasible; 5) In the case of heat exchangers with the pebble bed, the considerable increase in the heat transfer coefficient with only a small increase in the hydraulic resistance, plus the self-cleaning of the heat transfer surface indicate that such a heat exchanger is feasible. Orig. art. has: 4 figures and 17 formulas. [AS]

SUB CODE: 20/ SUBM DATE: 04Jan65/ ORIG REF: 010

fv

Card 2/2

ACC NR: AP0022203 SOURCE CODE: UR/0115/66/000/005/0050/0053

AUTHOR: Lebedev, A. V.; Tolchinskiy, Ye. M.

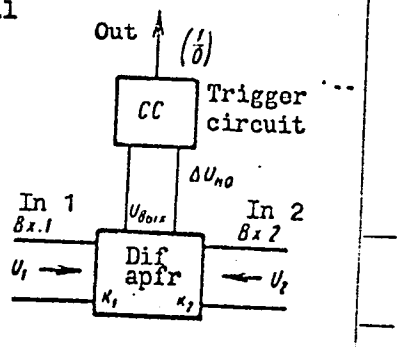
ORG: none

TITLE: Balance detector with differential amplifier

SOURCE: Izmeritel'naya tekhnika, no. 5, 1966, 50-53

TOPIC TAGS: balance detector, null detector, differential amplifier, electronic amplifier, electronic circuit

ABSTRACT: The balance (null) detector is considered whose output indicates which of two voltages being compared is higher. The detector circuit (see figure) with two isolated inputs has high cophasal-noise rejection and satisfactory stability. Based on recently published theory of differential systems ("Noise levels in measuring systems: a classification study." Strain gage reading , 1961, v. 4, no. 1), formulas are derived for detector errors caused by asymmetry and nonlinearity of the differential amplifier. Relations describing practical conditions of balance and symmetry are derived; they can be used in adjusting the measuring circuit. A possibility of drift (up to 100 μv in the case of transistorized amplifiers) should also be taken into account. Orig. art. has: 3 figures and 16 formulas.



SUB CODE: 09 / SUBM DATE: none / ORIG REF: 001 / OTH REF: 002

Card 1/1 UDC: 621.317.726+621.375.1

ACC NR: AP7003008 SOURCE CODE: UR/0413/66/000/024/0156/0156

INVENTORS: Tolchinskiy, Ye. M.; Lebedev, A. V.; Gorbunova, G. I.; Dobrov, N. A.; Gusel'nikova, M. V.; Zagryadskiy, A. I.; Zazulin, V. A.; Podol'skaya, G. V.

ORG: none

TITLE: An automatic measuring and recording device "ERA". Class 42, No. 165597

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 156

TOPIC TAGS: measuring instrument, transistor, analog digital converter, logic element

ABSTRACT: This Author Certificate presents an automatic measuring and recording device "Era." The device contains a group relay commutator of the meters, grouped measuring amplifiers, an analog-digital converter with a zero-organ and a generator of stage voltages, and a directing unit. To connect a desired group to the analog-digital converter and to measure voltages of alternating signs, a logic commutator is connected to the outputs of the measuring amplifiers. This commutator contains transistor switches, the number of which is equal to twice the number of amplifiers. These switches are connected to the group counter and to the sign trigger. The input of the unity position of this trigger is connected to the directing unit, and the input of the zero position is connected with the output of the zero organ.

SUB CODE: 09/ SUBM DATE: 11Jul63

Card 1/1 UDC: 681.178.9

LEBEDEV, A.V.; TOLCHINSKIY, Ye.M.

Analysis of the measuring circuit of an analog-to-digital converter having a differential amplifier. Priborostronenie no.12:1-4 D'63. (MIRA 17:5)

ZUBOV, Ivan Petrovich, inzh.; SHTEYNBOK, G.Yu., inzh., ved. red.; TOLCHINSKIY, Ye.M., inzh., red.; SOROKIN, T.M., tekhn.red.

[Stability of the thermoelectromotive force in chromel-alumel thermocouples in a 300 - 1000° temperature range]Stabil'nost' T.E.D.S.khromel'-aliumelevykh termopar v intervale 300 - 1000. Moskva, Filial Vses. in-ta nauchn. tekhn. informatsii, 1957. 32 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 34. No.P-57-20/5) (MIRA 16:3)
(Thermocouples) (Chromel) (Alumel)

GERASHCHENKO, Oleg Arkad'yevich, kand. tekhn. nauk; FEDOROV, Vladimir Gavrilovich, inzh.; MORDVINOVA, N.P., inzh., ved. red.; TOLCHINSKIY, Ye.M., inzh., red.; SOROKINA, T.M., tekhn. red.

[Heat flow transducers]Datchik teplovogo potoka. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 10 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 34. No.P-58-80/8) (MIRA 16:3)
(Transducers) (Heat--Transmission) (Heat exchangers)

YEREMENKO, Aleksandra Semenovna, kand. tekhn. nauk; PECHUK, Vasiliy Ivanovich, kand. tekhn. nauk; GAZHEMAN, Ivan Lazarevich, inzh.; SHTEYNBOK, G.Yu., inzh., ved. red.; TOLCHINSKIY, Ye.M., red.; SOROKINA, T.M., tekhn. red.

[Stand for investigating aerodynamic processes in rotating models of turbine stages]Stend dlia issledovaniia aerodinamicheskikh protsessov vo vrashchaiushchikhsia modeliakh stupenei turbin. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 8 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 34. No.P58-48/5) (MIRA 16:3)
(Air turbines--Testing)

LEBEDEV, A.V.; TOLCHINSKIY, Ya.M.; TYAPKIN, M.V.

The DIU-256/1 electronic measurement unit with a digital output.
Priborostroenie no.11:13-17 N '60. (MIRA 13:11)
(Electronic measurements)

16.9500 (1031, 1132, 1222)
6.7800 (also 1067)

86650

S/119/60/000/011/006/009
B012/B054

AUTHORS: Lebedev, A. V., Tolchinskiy, Ye. M., and Tyapkin, M. V.

TITLE: Electronic Measuring Device ДИУ-256/I (DIU-256/I) With Digital Output

PERIODICAL: Priborostroyeniye, 1960, No. 11, pp. 13 - 17

TEXT: The authors describe the electronic measuring device ДИУ-256/I (DIU-256/I). It serves for the automatic measurement of 256 parameters, but it can also measure a lower number (128, 64, or 32). In such cases, each transmitter is consulted 2, 4, or 8 times, respectively, during one series of measurements. One series of measurements of the 256 parameters is carried out in 1 second. The multichannel system of the device permits the use of several channels for the connection of calibration signals. The measurement results are printed on the record sheet in the form of three-place decimals. As there is no printing device available that is capable of printing 256 three-place numbers in one second, this apparatus uses a buffer memory with a magnetic drum. Printing of the 256 measured values takes about 25 seconds. An operator controls the device from a remote-

Card 1/7

Electronic Measuring Device ДИУ-256/I (DIU-256/I) With Digital Output

S/119/60/000/011/006/009
B012/B054

control panel. Besides the printing device, a perforator may be used for the automatic feeding of data into the digital computer. Fig.1 shows the block diagram of the device. Its main characteristics are the grouping of transmitters of the same type, as well as the two-stage commutation, i.e. each group of transmitters may have a transmitter commutator, an amplifier, and a zero organ (nul'-organ) considering the characteristics of the respective transmitter group, and may use a calibration oscillator for various transmitter groups. The transmitters of the device are divided into four groups. Each group consists of 64 transmitters. The transformation of the continuous voltages into the code is based on a comparison of the measured voltage with the gradually increasing calibration voltage generated by the calibration oscillator by means of the zero organ, as well as on the counting of impulses traveling from the control block to the calibration oscillator. Among the four valves, only one is upon at a time. The alternating opening of valves is done by the electronic commutator of the second stage which, in turn, is controlled by the impulses coming from the valves. The transformation control block synchronizes the operation of the circuit during the transformation, controls the electronic commutator of the second stage and the calibration oscillator, and ensures the

recording of the code on the magnetic drum. Another control block selects the code on the magnetic drum. A third block controls the printing mechanism. Fig.3 shows the functional scheme of the commutator for the transmitters. It consists of various stages, and includes a decoder for four outputs, two decoders for 16 outputs, and an output matrix. Fig.4 shows the circuit diagram of the calibration oscillator and of the zero organ. The calibration oscillator consists of a binary counter with ten classes, and a transformer of the code to a proportional voltage. An experimental checking of the calibration oscillator showed that the drift of the stabilizer currents is at most 0.03% after 5 hours. A d.c.amplifier with automatic selection of the drift (between the two measurement series) is used to amplify the signals coming from the transmitters. Fig.5 shows the circuit diagram of a d.c.amplifier of the type УПТ-1 (UPT-1). Tests of the device showed an error of $\pm$0.1% in the transformation and recording at input voltages of 0-5 v. There are 6 figures and 3 Soviet references.

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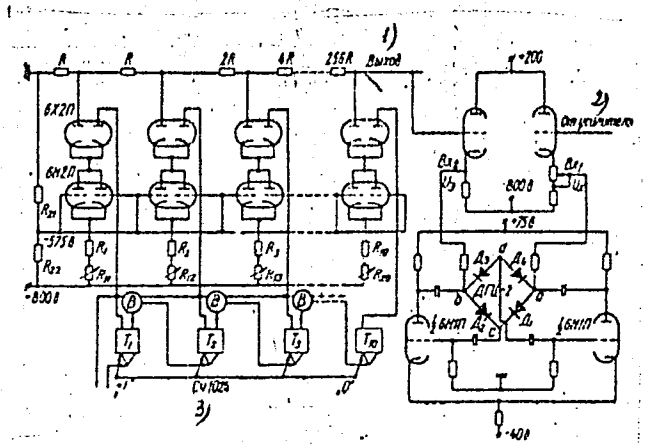

Рис. 4. Схема генератора эталонных напряжений и нуль-органа. Падение напряжения на сопротивлении R_{12} составляет 575 в.

Card 4/7

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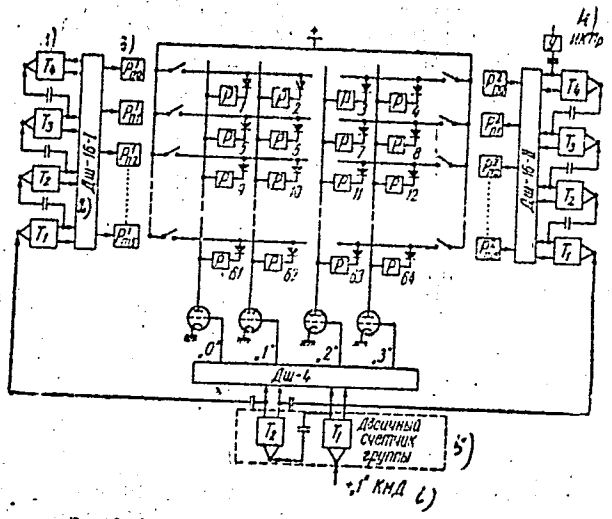

Рис. 3. Функциональная схема коммутатора датчиков.

Card 5/7

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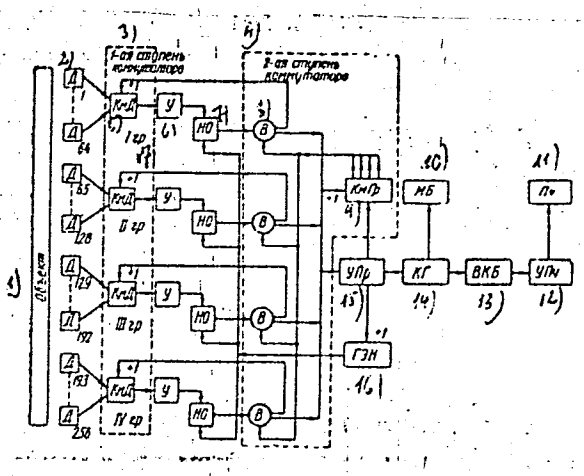

Рис. 1. Блок-схема ДИУ-256/1.

Card 6/7

Legend to Fig.1: Block diagram of DIU-256/I. 1) Object, 2) transmitter, 3) first commutator stage, 4) second commutator stage, 5) transmitter commutator, 6) amplifier, 7) zero organ, 8) valve, 9) electronic commutator of the 2nd stage, 10) magnetic drum, 11) printing mechanism, 12) printing control block, 13) control block for code selection, 14) commutator for the magnetic-drum heads, 15) transformation control block, 16) calibration oscillator, 17) group.

Legend to Fig.3: Functional scheme of the transmitter commutator. 1) Trigger, 2) decoder, 3) relay, 4) last trigger of the input counter of the decoder ДШ-16-II (Dsh-16-II), 5) binary counter of the group, 6) transmitter commutator.

Legend to Fig.4: Circuit diagram of the calibration oscillator and of the zero organ. Voltage drop on resistor R_{22} is 575 v. 1) Output, 2) from amplifier, 3) counter of calibration oscillator.

Legend to Fig.5: Circuit diagram of the d.c.measuring amplifier: Ком - kiloohms, пФ - picofarads, МКФ - microfarads, ОМ - ohms, Гц - cycles, Л - tube, В - volts 1) Relay, 2) vibrator, 3) reversing motor, 4) two-part panel for 20 pieces.

Card 7/7

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Surname (in caps); Given Names

2

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Affiliation: [not given]

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